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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,118	09/21/2001	Steven R. Pearson	BEA920010027US1	5751
49056	7590	10/24/2005	EXAMINER	
LIEBERMAN & BRANDSDORFER, LLC 802 STILL CREEK LANE GAITHERSBURG, MD 20878			FILIPCZYK, MARCIN R	
			ART UNIT	PAPER NUMBER

2163

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/960,118	<b>Applicant(s)</b> PEARSON, STEVEN R.	
	<b>Examiner</b> Marc R. Filipczyk	<b>Art Unit</b> 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on RCE 8/23/05 and amendment 7/25/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Action is responsive to Applicant's RCE request of August 23, 2005 and amendment filed on July 25, 2005.

**To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. amendments, 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).**

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 23, 2005 has been entered.

Claims 1-14 are pending.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 6-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

The basis of this rejection is set forth whether the invention is within the technological arts.

For a claimed invention to be statutory, the claimed invention must be tangible within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the “progress of science and the useful arts” (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a data structure claim to pass muster, the recited steps must somehow apply, involve, use, or advance the technological arts.

In the present case, independent claim 6 only recites an abstract idea. The recited claim is not tangibly embodied.

Since the claimed invention, as a whole, is not within the technological arts as explained above, claim 6, and claims 7 and 8 which depend from claim 6, are deemed to be directed to non-statutory subject matter.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 9, claim 1 being the exemplary claim, lines 7-9, the feature of “identifying a data item... as being a duplicate... based on said assigned status identifier” is indefinite. It is not clear how a data item is identified as a duplicate or any other status based on

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the assigned status identifier of an input stream and not the comparison of data item or value itself. Further regarding lines 7 and 8, the segments, “a second input stream” and “a first input stream” are indefinite because it is not clear whether a second set of first and second input streams is used or created. Note, a first and second input stream is used on lines 5 and 6, respectively. On lines 14 and 15, the segment of “merges said input streams into a single output stream” is indefinite. It is not clear how the input streams are merged into a single output stream based on the processing of a single value. The terms “data item” along with “value” are indefinite. It is not clear what is the difference between the data item and value. Last, the segment of “the quantity of input streams is an odd number greater than one” is indefinite. The lowest odd number greater than 1 is 3, however, the claim appears to use only a first input stream and a second input stream, thus 3 or more input streams are not taught or used.

Regarding claim 6, the feature of “merging” is indefinite. It is not clear from the body of the claim what if any data is merged. The feature of “assigning said identifier of said second input stream as a duplicate identifier... processing a value” is indefinite. It is not clear how a duplicate identifier is identified and how a value for processing is selected based on the duplicate identifier and not the comparison of data item or value itself. Nowhere in the claims are any values compared. The terms “data item” along with “value” are indefinite. It is not clear what is the difference between the data item and value. Last, the segment of “the quantity of input streams is an odd number greater than one” is indefinite. The lowest odd number greater than 1 is 3, however, the claim appears to use only a first input stream and a second input stream, thus 3 or more input streams are not taught or used.

Claims 2-5, 7, 8 and 10-14 depend from claims 1, 6 and 9 respectively, thus they are rejected on the same merit.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Or,

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 6 and 9 are rejected under 35 U.S.C. 102(b) as best as Examiner is able to ascertain as being anticipated by Smith (U.S. Patent No. 5,832,068).**

Regarding claims 1, 6 and 9, Smith discloses a method, program and data structure for merging data items from two or more input streams comprising: (merging being equated with organizing data, see fig. 1, items 10 and 12 col. 1, lines 19-24)

*(Note: Smith compares unique record identifiers, if a match occurs indicating it's a duplicate, that record is discarded and not processed, equivalent to Applicant's merging step of simply merging two streams into one, just like Smith merges two input streams into one by discarding the duplicate)*

assigning a status identifier to each input stream, said identifier reflecting a state of an input stream; (fig. 3, 104)

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comparing a status identifier of a first input stream with a status identifier of a second input stream; (fig. 3, 106)

identifying a data item being processed from a second input stream as being a duplicate of a previously processed data item from a first input stream based on said assigned duplicate data item; (fig. 3, items 106 and 108)

processing a value from said second input stream responsive to said assigned duplicate status identifier (col. 8, lines 47-51), wherein the step of processing said value merges said input streams into a single output stream and avoids exhausting one of said input streams when a quantity of said input streams is an odd number greater than one (col. 8, lines 51 and 52, fig. 4, items 208, 210 and 212).

*(Note: record index is equivalent to nodes, see fig. 2)*

**Claims 1, 5, 6, 9 and 13 are rejected under 35 U.S.C. 102(a) as best as Examiner is able to ascertain as being anticipated by Applicant's Admitted Prior Art (AAPA), Applicant's Disclosure.**

Regarding claims 1, 6 and 9, Smith discloses a method, program and data structure for merging data items from two or more input streams comprising: (fig. 5A and page 1, par. 5, lines 2 and 3)

assigning a status identifier to each input stream, said identifier reflecting a state of an input stream; (fig. 5A, item 500 and see nodes)

comparing a status identifier of a first input stream with a status identifier of a second input stream; (fig. 5A, nodes and page 1, par. 5, lines 7 and 8)

identifying a data item being processed from a second input stream as being a duplicate of a previously processed data item from a first input stream based on said assigned duplicate data item; (fig. 5A, nodes and page 1, par. 6, lines 3-5, *duplicate*)

processing a value from said second input stream responsive to said assigned duplicate status identifier (page 1, par. 5, lines 8-11 and par 6, line 4), wherein the step of processing said value merges said input streams into a single output stream and avoids exhausting one of said input streams when a quantity of said input streams is an odd number greater than one (fig. 5A and page 1, par. 5, lines 2 and 3 and 10-11).

*(Note: AAPA teaches any number of input streams represented by the letter N)*

AAPA further teaches each node of the selection tree comprises an identifier of one of the input streams, and a reference to a data item being processed from that one of the input streams (fig. 5A, item 500 and nodes)

Regarding claims 5 and 13, AAPA discloses the method is a replacement selection method using a loser oriented selection tree (fig. 5 and page 1, paragraphs 5 and 6).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person



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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2-4, 7, 8, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent No. 5,832,068) in view of AAPA.**

Regarding claims 2-4, 7, 8, 10-12 and 14, Smith discloses all of the claimed subject matter as discussed above including a status identifier corresponding to duplicate data item; (fig. 3, items 106 and 108, Smith), but does not expressly teach a value corresponding to “empty”, “duplicate”, “merging” or “done”. Examiner states that assigning value identifiers for specific comparisons is a common practice in computer programming. For instance, AAPA teaches an ordered merging replacement selection wherein each node of a tree stores information about a “loser” of a prior sort key comparison among its children. AAPA further teaches the status identifier has a value corresponding to duplicate keys (p.1, par. 6, lines 6 and 7; *-1, 0, 1 where 0 is done or a duplicate*).

Hence, it would have been obvious to a person of ordinary skill in the art having Smith’s indicator along with AAPA at the time the invention was made to modify Smith’s indicator in view of AAPA so that the unique integer values would indicate a specific task (e.g. value two for merging) because Smith’s data record exclusion indicator includes a generated unique data record identifier (col. 3, lines 27-29, Smith) and AAPA teaches values corresponding to comparisons, including duplicate keys (page 1, par. 6, lines 5-7, AAPA), thus the modification would be simple having both arts at hand. One would have been motivated to combine Smith and AAPA to process data faster and more efficiently.

*Response to Arguments*

Applicant's arguments filed July 25, 2005 have been fully considered but they are not persuasive. The arguments and responses are listed below. Note, Applicant herein refers to the Applicant's representative, Rochelle Lieberman.

On page 6 of the 7/25/05 response, Applicant requests that by amending claims all 35 U.S.C. 112, second paragraph rejections should be withdrawn.

Examiner disagrees. Applicant's amendment did not overcome all the indefiniteness issues previously raised, further, additional rejections under 35 U.S.C. 112, second paragraph are made. Please see rejection above.

On page 7 of the 7/25/05 response regarding Smith, Applicant notes that, Applicant processes data from a second input stream in response to a duplicate status identifier".

Examiner agrees. Smith also processes data from a second input stream in response to a duplicate status identifier, see fig. 3, items 106 and 108. Examiner further notes that in order for the claimed system to be aware of the duplicate status identifier, two identifiers must be compared, thus processed.

On page 7 of the 7/25/05 response regarding AAPA, Applicant argues that Applicant "avoid exhausting one input stream over another even when the number of input streams is not an even power of 2", and this feature is not taught by AAPA.

Examiner disagrees. The argued feature is not clearly claimed, further, AAPA permits merging any number of input streams (see page 1, par. 5, lines 10-11, AAPA), any number including both odd and even. Examiner further notes that when two input streams are equally merged it is the natural process not to exhaust any one input stream.

On pages 8 and 9 of the 7/25/05 response, Applicant argues that prior art does not teach four integer options.

Examiner disagrees. Smith and AAPA teach the status identifier has a value corresponding to empty, duplicate, merging and done (p.1, par. 6, lines 6 and 7; *-1, 0, 1 where 0 is done or a duplicate*, AAPA). Note, it is a common practice in computer programming to assign value identifiers for specific tasks. According to the claims and specification, each value corresponds to a unique identifier, and it is notoriously well known in computer programming to assign unique identifiers for empty, duplicate, merging, done, equal, etc. For more information please see rejection.

With respect to all the pending claims 1-14, Examiner respectfully traverses Applicants assertion based on the discussion and rejection above.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R. Filipczyk whose telephone number is (571) 272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF  
October 19, 2005

  
**FRANTZ COBY**  
**PRIMARY EXAMINER**